

**Listing of the Claims:**

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1 (Canceled).

1       2 (Currently Amended). The method of image compression recited in  
2       claim + 4, wherein the patterns identified, image components,  
3       parameterization of patterns, and lower level numerical encodings are all  
4       designed around images belonging to a narrow class of images.

1       3 (Original). The method of image compression recited in claim 2, wherein  
2       the narrow class of images are two-dimensional projections of three-  
3       dimensional visualizations of data generated by numerical weather  
4       simulations.

1       4 (Currently Amended). ~~The A~~ method of image compression ~~recited in~~  
2       ~~claim 1~~, wherein the ~~images are of the class exemplified by 2-D~~  
3       ~~projections of 3-D weather model images; said method further comprising~~  
4       the steps of:

5               analyzing an image in terms of perceptual constructs of the human  
6       visual system;

7               searching for patterns among analyzed abstractions of the image;

8               describing the image in terms of the perceptual constructs and the  
9       patterns found among them;

10              for a given image that is in a same "class" as the image, re-  
11       representing the given image by describing the given image as a collection  
12       of parameterized versions of patterns prevalent in that same "class" of  
13       image;

14              taking a resulting description outside of the context of abstract  
15       patterns;

16              looking for redundancies in the description, then re-representing

17 the description so as to eliminate the redundancies and thereby compress  
18 the description;  
19 re-representing entities patterns with smoothly curved borders and  
20 an interior fill that can be parameterized and is either largely derivable  
21 from other image data or constant, as curve sequences and parameters  
22 required to describe the interior of the pattern; and  
23 re-representing entity groups with constant structure that vary only  
24 in terms of a spatial parameter as references to the entity pattern group, and  
25 a list of the values for the required parameters, each value being for each  
26 subsequent entity pattern for the group.

1 5 (Original). The method of image compression recited in claim 4, wherein  
2 the spatial parameter is orientation or color.

6 (Canceled).

1 7 (Currently Amended). The method of compression of two-dimensional  
2 projections of three-dimensional visualizations of image data recited in  
3 claim 6 8, wherein the data are generated by numerical weather  
4 simulations.

1 8 (Currently Amended). ~~The~~ A method of compression of two-dimensional  
2 projections of three-dimensional visualizations of image data recited in  
3 claim 7, wherein the step of dismantling the input image into components  
4 includes separation of solid filled contours, transparent, shaded colored  
5 two-dimensional projections of three-dimensional iso-surfaces, arrow color  
6 and orientations in three-dimensional space, and text and further  
7 comprising the steps of:  
8 inputting a two-dimensional image;  
9 dismantling the two-dimensional image into components, wherein  
10 the step of dismantling the input image into components includes  
11 separation of solid filled contours, transparent, shaded colored two-

12       dimensional projections of three-dimensional iso-surfaces, arrow color and  
13       orientations in three-dimensional space;  
14       tracing contours defined by the boundary of the components by  
15       fitting parametric curves to the borders of the contours;  
16       tracing three-dimensional visualization of the image by fitting  
17       curves to the borders of the contours;  
18       representing numerical values of curve nodes as distances from one  
19       another or a local origin;  
20       storing compact border and color description of contours and  
21       compact border and color description of iso-surfaces;  
22       representing numerical values of arrow colors and orientations as  
23       differences; and  
24       storing compact color and orientation information for arrows and  
25       separated text.

1       9 (Original). The method of compression of two-dimensional projections  
2       of three-dimensional visualizations of image data recited in claim 8,  
3       further comprising the steps of:  
4               receiving the compact border and color description of contours, the  
5       compact border and color description of iso-surfaces, the compact color  
6       and orientation information for arrows, and text; and  
7               decompressing the received information to generate a  
8       representation of the original two-dimensional image.

1       10 (Original). The method of compression of two-dimensional projections  
2       of three-dimensional visualizations of image data recited in claim 9,  
3       wherein the step of decompressing comprises the steps of:  
4               accessing a static background image representing geography and  
5       drawing the background;  
6               accessing a static description of arrow locations and skew, structure  
7       and definition of an arrow, and received compact color and orientation  
8       information for arrows and drawing arrows;

9                   accessing structure and definition of an iso-surface and received  
10       compact border and color description of iso-surfaces and drawing iso-  
11       surfaces;  
12                   accessing structure and definition of a contour and received  
13       compact border and color descriptions of contours and drawing color  
14       contours; and  
15                   accessing received text and drawing text.

1       11 (New). The method of image compression recited in claim 2, wherein  
2       the images are of the class exemplified by 2-D projections of 3-D weather  
3       model images